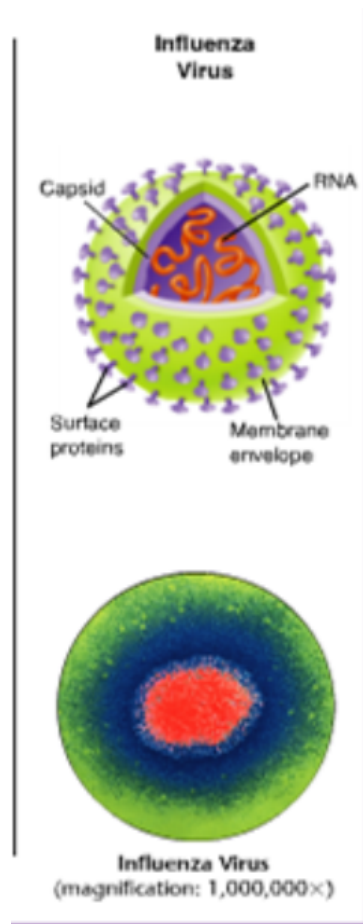
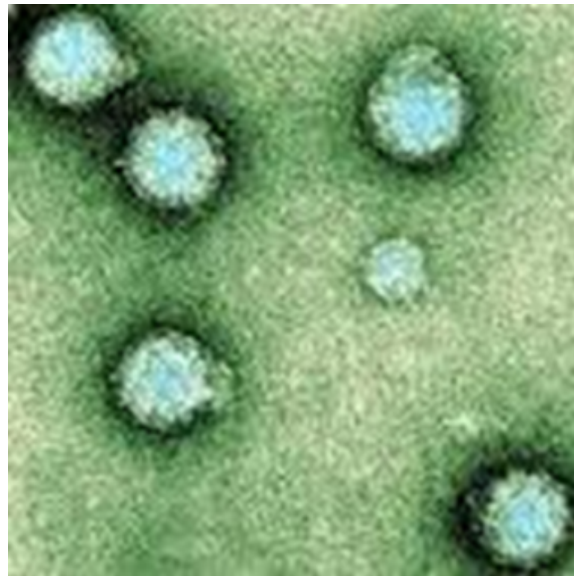


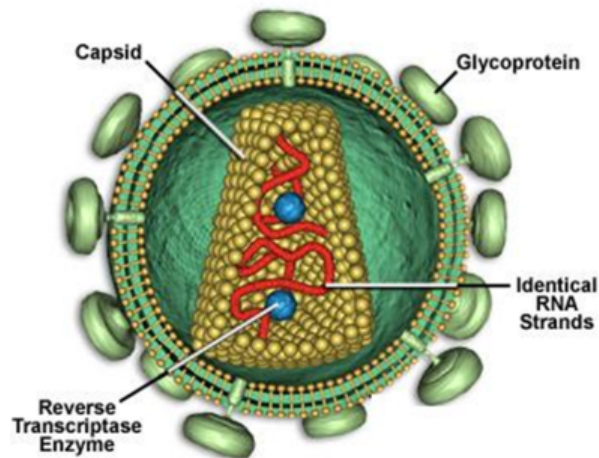
Viruses and Protein



HIV Virus

Infects Helper T cells of the immune system

Human Immunodeficiency Virus (HIV) Anatomy



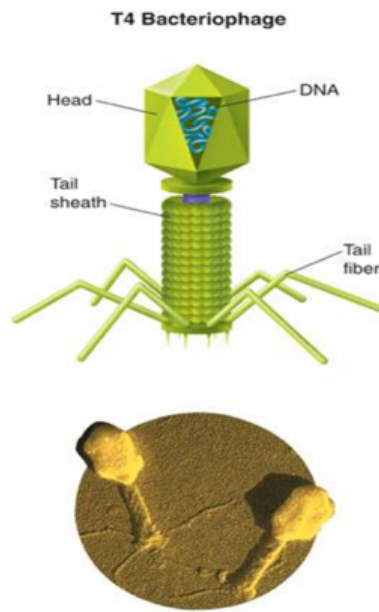
Tobacco Mosaic Virus

Infects Plants



Bacteriophage

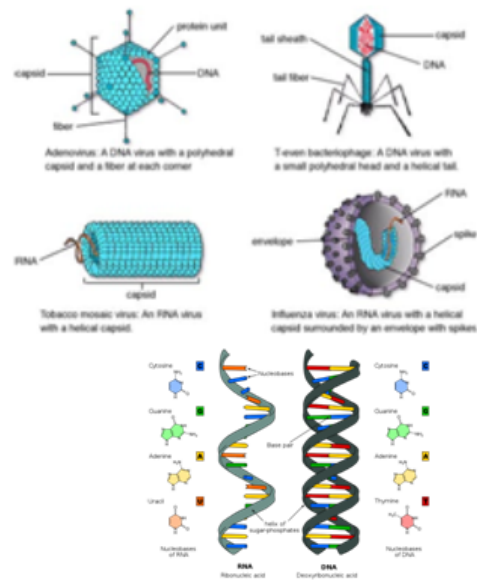
Infests Bacteria



Viral Structure

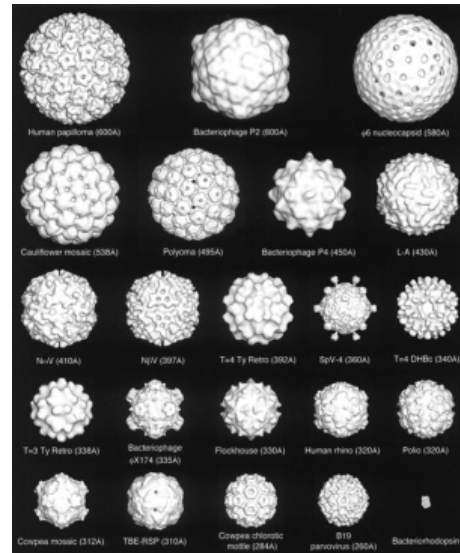
All Viruses have two basic components in their structure:

- Genetic Material
DNA or RNA
- Capsid
A protein coat



Capsid

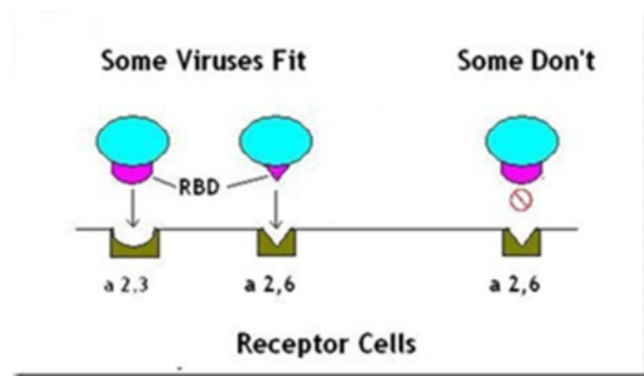
A capsid is a protein coat that surrounds the virus's genetic material. They are unique to each type of virus



Function of Protein Coat

- Protect the Viral genetic material
- Recognition of the host cells
- Viruses are very specific to which cells they are able to enter
- Proteins of the virus must match with the protein on the cell membrane of the out cell

<http://www.youtube.com/watch?v=moBtPyuPXrE&NR=1&feature=endscreen>

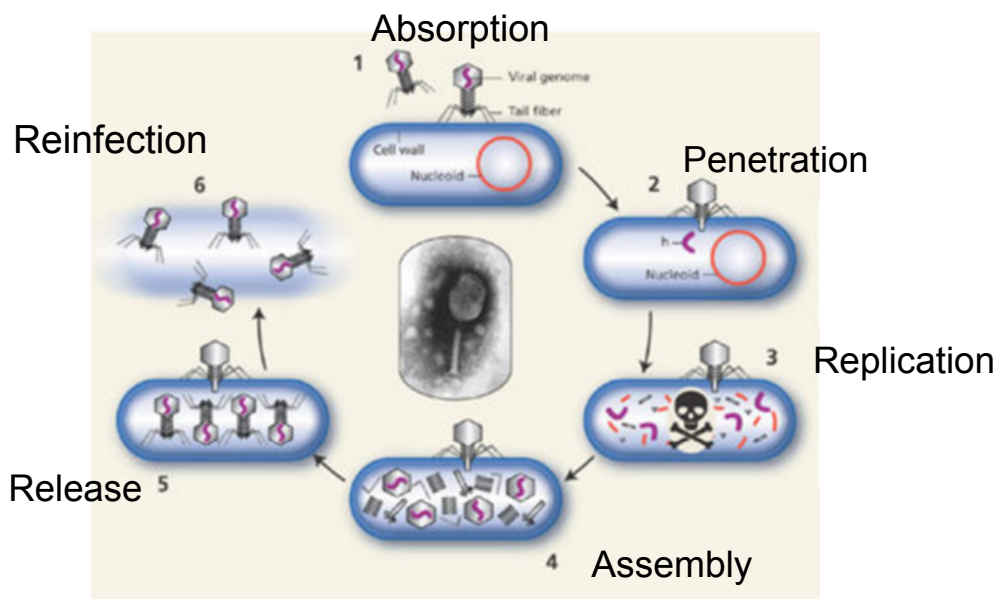
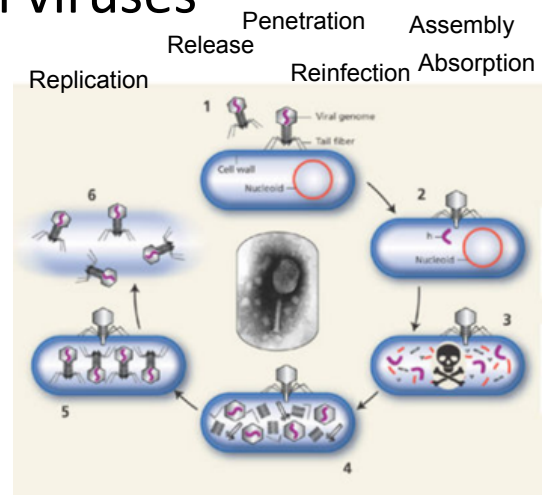


Protein Synthesis in viruses

- In order to produce proteins you need genetic material, amino acids, and a ribosome.
- Viruses only have genetic material.
- Viruses force their host cells to produce needed protein during the virus' replication cycle.

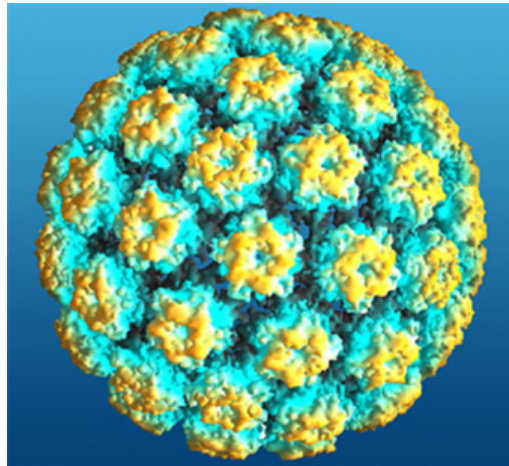
- Use the link to label and describe the steps to the lytic cycle (viral replication)

<http://faculty.ccbcmd.edu/courses/bio141/lecguide/unit3/viruses/lytic.html#rellyt>



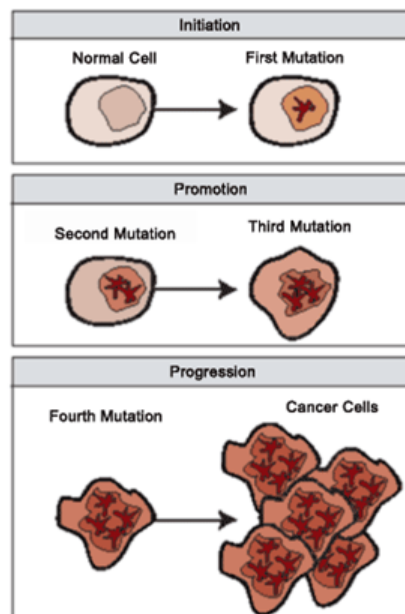
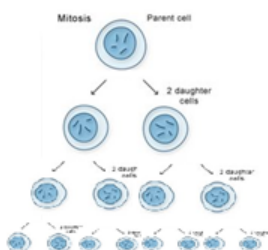
1) Phage attaches to a specific host bacterium and (2) injects its DNA, (3) disrupting the bacterial genome and killing the bacterium, and (4) taking over the bacterial DNA and protein synthesis machinery to make phage parts. (5) The process culminates with the assembly of new phage, and (6) the lysis of the bacterial cell wall to release a hundred new copies of the input phage into the environment.

Viruses and Cancer



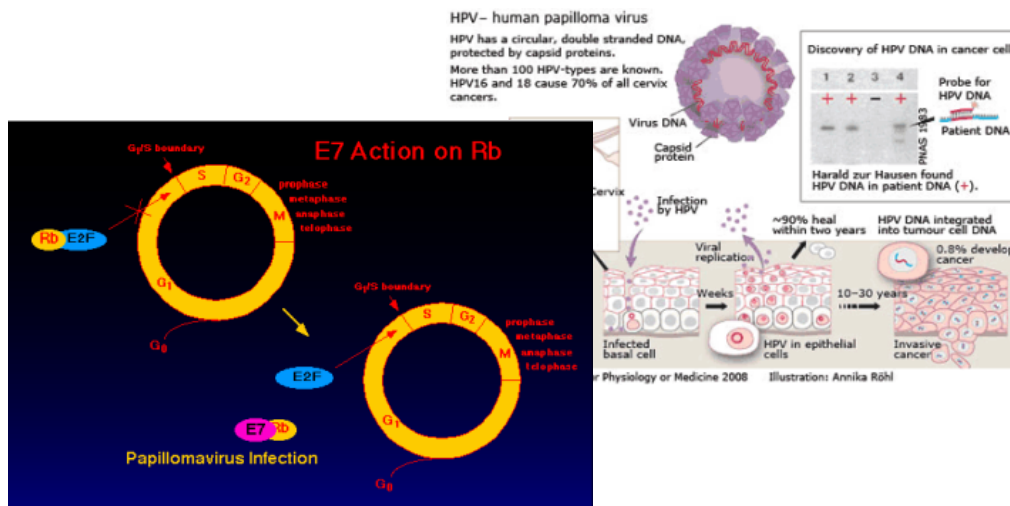
Cancer

A disorder in which some of the body's own cells lose the ability to control growth

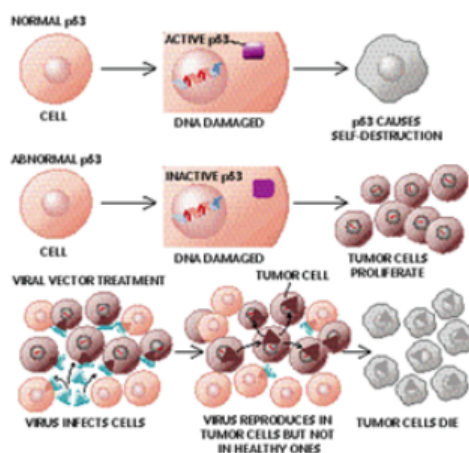


How does a virus cause cancer?

1. The virus alters the cell's genetic coding, causing a mutation. In turn, these actions can result in cancer.
2. Blocks tumor suppressor genes.



Viruses can help treat cancer

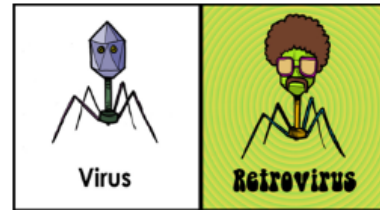


- Read the article at your table, find which viruses cause cancer and which viruses can help treat cancer.
- Which cancers are they helping/hurting?



RNA for genetic material

- Oncoviruses are virus that may lead to cancer. A lot of oncoviruses have RNA as the genetic material. A retrovirus is a virus with RNA for it genetic material.
- Watch the clip and observe what the cell must do with the RNA from the virus.



<http://www.youtube.com/watch?v=eS1GODinO8w>